DVTE AFATDS/JLVCDT
SETUP GUIDE

Prepared for:
United States Marine Corps

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1 PURPOSE

This document is written in support of the DVTE system. It is intended to be used by operators as a reference to complete manual configuration of an AFATDS in order for it to communicate with JSAF using JLVCDT.

2 AFATDS

2.1 AFATDS BASICS

The following few sections deal with setting up an AFATDS box. For more detailed information, please refer to AFATDS documentation. These sections do not detail setting up fire plans, schedule of fires, proper commander's guidance, or other features provided by AFATDS.

2.2 AFATDS BOOT-UP SEQUENCE

Make sure HD is installed in left BAY and the code on the left is 3062 from top to bottom.

Connect the CAT-5 cable on the left side where you see the symbol <000>. Connect the other end to the switch/hub.

Turn on power. The switch is located just above the power cord.

The boot process takes time. Be patient.

For the assign new IP dialog, **select NO**.

For the assign new netmask, **select NO**.

For the assign new domain name, **select NO**.

At the login screen type: **afatds1 ENTER**

Then type: **afatds** **ENTER** *No Text Will Appear*

If the login screen comes back up, try again until successful.

Select OK for the COE login processing is complete dialog.

Now that we are in the Operating System, we need to start the AFATDS program.

2.3 EDITING THE JMUL (JOINT MASTER UNIT LIST)

Disclaimer – This is for DVTE Simulation purposes ONLY!!!

Units to be used in simulation need to have their system types modified to VMFR5 to properly communicate with the rest of the simulation components.

From the AFATDS Main Menu Bar, **select System->Master Unit List**

When the Select Unit dialog comes up, set the filters and find the unit to be modified.

Select the unit to be modified by Double Clicking on the entry in the list.

In the System Name section select **VMF R5 System**

Select OK when complete

2.4 UNIT GUIDANCE CONFIGURATION

Disclaimer – The guidance setup is very generic to allow the operator to generate fire missions. Some of the values used in this section might not be realistic. This is for DVTE Simulation purposes ONLY!!!

This process is used after the CCU-2 is booted up and the AFATDS USMC application is fully started.

From the AFATDS Current Menu Bar, **select Guidances->Workspace…**

Double click the file Target Selection Standards

Max TLE is the maximum Target Location Error a FO can have.

Max Rpt Age is the maximum time in minutes that AFATDS will consider a target of this type.

You want these values to be relatively high. You can **alternate hitting the 9 key and the tab key**.

This **must be done for each Target Category Type**.

Select OK when complete

Double click Target Decay Time

Alternate hitting the 9 key and the tab key.

This **must be done for each Target Category Type**.

Select OK when complete

Double click High Value Target (HVT) List

Move the sliders under Value to around 75 – 100. Do not use the same values.

Double click Mission Prioritization

Assign Value by: should be **changed from Rank to Weight**

In the Fire Mission Cutoff Values section enter the following

FA Cannon	3
Rocket/Missile	20
Mortar	7
Air	10
Aviation	15
Naval Gun	5
Naval Land Attk Missile	6
Naval Cruise Missile	8

Figure 2-1 Mission Cutoff Values

Values can be used to accommodate assets available in the simulation. The lower the value, the more likely AFATDS will nominate that mission type.

Select OK when complete

This is the bare minimum need to support fire missions. You can use the Attack Methods to explicitly state munition types, and number of munitions for a particular target type.

2.5 PROCESSING A FIRE MISSION

Disclaimer – This is to show a quick mission setup with very little operator input. Please refer to the AFATDS operator's manual for a more detailed process

On the AFATDS Tactical Map, **select MapOptions->Zoom**

Put the cursor in the area of interest

Hold the left mouse button down and move the cursor

This will form a resize window. When the window is at the desired size**, let go of the left mouse button**.

We want to see the range fan of the firing unit. **Left-click once on the firing unit and select Map->Filters->ShowRangeFans**

At the AFATDS Current Menu Bar, **select MissionProcessing->InitiateFireMission…**

Now get a location from the map. To do this put the cursor within the range fan of the firing unit, **hold down the CTRL key and right click**

In the Target Description section, move the cursor over the Location input area, **hold down the CTRL key and middle click**.

This is how you copy and paste location data from the map.

Using the Shift + Right click, you can change the location from UTM to GEO to MGRS

After you have copied a location you have to set the altitude. You can get that information from JSAF.

Now **select Analyze Target**

The Dialog box will go away and you will notice the number 1 beside the IP icon. **Select the IP icon**

This is where the target processing has determined a solution. At the bottom of the Intervention List window is the Recommendation section. This tells the operator the best solution that AFATDS has. If you **press Accept Recommendation**, this is what AFATDS will do.

Under Attack Options you can select any in the list and press Send Selected if you would prefer to attack a target with another asset.

2.6 AFATDS M777 BATTERY SETUP

Disclaimer – This section will not show you how to install software, troubleshoot problems, or set-up anything other than an M777 firing battery.

Select **Start->AFATDS->USMC**

You will now see the Startup Progress bar Indicator…

You will get a dialog box that says Tube Strength Selection. **Select the 3x6 option and click Set.**

When the Multi-station OPFAC Name dialog comes up, just **select OK** with nothing in the text section and keep waiting...

The Unit Configuration Dialog is the next window to deal with. This will establish what role this AFATDS is playing. For the Unit ID **select the box next to it and click on the Select…** option.

When the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type **10TH and select Apply**

Select the BOC A BTRY 1ST BN 10TH MAR entry and then **select OK**

Back at the Unit Configuration window **select the box next to Unit Role and press the Select…** option

Select FA CP/FDC and press OK

Select the entry under Workstation (This is located a little over half way down the dialog box)

Edit the text box next to Workstation Name to reflect BOC A.

Now **select Activate** at the bottom of the dialog box.

This takes 30 to 60 seconds…

Now select OK

You might get a bunch of alerts about deleting active targets. This is normal. Go ahead and select Delete and clear out the message alerts by highlighting them and clicking on Delete.

After AFATDS startup completes, a map and the AFATDS Main Menu Bar will be displayed.

All menu selections will be referencing the uppermost menu. Not the Menu for the Tactical Map. We will not be using the Tactical Map's Menu for this document.

Select the fourth Icon from the left that looks like a handset.

This will bring up the Communications Workspace dialog

First thing to do is to create a configuration and make it current. To do this click on Options->New…

In the pop-up box name your configuration (JSAF) and click OK.

You will see that it is created in the left frame. Highlight the (JSAF) entry. Click on Options->MakeCurrent.

For the save current configuration, Select yes.

Now we need to create a network configuration. To do this click on Network->New->IP->Ethernet/INC…

This will bring up the IP Network Information dialog box. Give it a Network Name. Give it a Hostname. Now enter the IP address you want the AFATDS to have along with the Subnet Address Mask. Now select OK.

Now we have to associate the Network configuration with a hardware interface. To do this we need to select the Communications Devices Tab.

Under the column Communication Device we want to find and entry for PRIMARY LAN that has no entry under the Assigned Network column. **Click on the down arrow and select the name given for the IP Network**.

Go back to the Network Data Tab.

Select the newly created Network Name and click ON. (This will take a couple of minutes)

2.6.1 Build Gun Comm Table

Now that the network is created and active, we want to build the 6 guns in the comms workspace. At the bottom of the Communications Workspace dialog, **select the Add… option**.

We are going to select the 6 guns defined for A BTRY. First **click on 1 1 A BTRY 1ST BN 10TH MAR** now **hold down the shift key and click on 6 2 A BTRY 1ST BN 10TH MAR**. With all six guns highlighted, **select OK**.

Now, under the Destination Unit column **select the 1 1 A BTRY 1ST BN 10TH MAR and click on Edit…**

Select the box next to Via: and click Select…

Select the Network Name and click OK.

Now, **enter the IP address of the JLVCDT computer** where you see Internet Address.

Select OK.

Select the next gun 2 1 A BTRY 1ST BN 10TH MAR and select Edit…

Select the Indirect Radio button.

Select the box next to Via and click Select…

At the Select Unit dialog, **click on 1 1 A BTRY 1ST BN 10TH MAR and click OK**.

Now **click OK**.

Go back to BUIILD GUN COMM TABLE and repeat for the last 4 Guns.

If the JLVCDT is up, you can send test messages. JSAF does not have to be running in order for the tests to be successful.

You can now **close the Communication Workspace dialog**

In the Communications Workspace **Select Options->Exit.**

Select Situations->Current

The Map will zoom into the ocean. **Select the Globe Icon**

Select Map->DisplayMap

Select Map->Overlays->InUse

Select Add… Highlight SOP and click OK.

Click Apply and then click OK

2.6.2 Create BOC

Now we need to setup the units that we are working with. From the AFATDS Current Menu Bar **Click Units->Workspace…**

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

The filter for the BOC should still be applied. If not, refer to the top of this section for setting the filter

The first unit we are going to setup is for our AFATDS unit. **Select BOC A BTRY 1ST BN 10TH MAR.** Now, **select the box next to Unit Type** and **click on Other.**

Click OK

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	FDC
Echelon	Battery
Function	Field Artillery Marine

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Click the save icon.

Now we need to create the individual guns that are going to be simulated in JSAF.

2.6.3 Create Guns

Click on the New Friendly Unit… Icon

Highlight the unit 1 1 A BTRY 1ST BN 10TH MAR, and for the Unit Type **select Cannon** and **select OK**.

The next four selections will be the box next to the name.

Entry	*Selection*
Service	USMC
Role	Unit
Echelon	Section

Function Field Artillery Marine

Cut and Paste a location from the map to the Current Location entry.

Double click the file under General called **General Data**

For Current Command Unit ID: **select BOC A BTRY 1ST BN 10th MAR**

For Current Supported Unit ID: select the same unit

Now **double click** the file under Detail called **Detailed Data**

Select M777A2 for Weapon Model

Check that Left Azimuth is 0 and Right Azimuth is 6400.

In the Weapon Data section **set Authorized to 1, Operational to 1, and On Hand to 1**

Click the save icon.

This will create more configuration files for this unit. The only one to worry about right now is the On Hand file under the Ammunition section. **Double Click the Ammunition->OnHand file**.

At the bottom **select New…**

Here is where we are going to tell AFATDS what munitions are available. I will put this information in a table format. Each line in this table is one full entry. **Once all the information is entered on a line, you will select OK. You will then select New… and enter information for the next line.**

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
HE	M107NC	A	AA	200	200
WP	M110A2	C	CC	200	200
DPICM	M483A1	D	DD	200	200
ILLUM	M485A2	I	II	200	200

Figure 2-2 M777 Projectiles

Now select the Fuzes tab and enter the following…

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
PD	M557	P	PP	200	200
TIME	M577	T	TT	200	200

Figure 2-3 M777 Fuzes

Now select the Propellants tab and enter the following…

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
GB	M3A1	G	GG	200	200
WB	M4A2	W	WW	200	200
RB	M119A2	R	RR	200	200
RB	M203	S	SS	200	200

Figure 2-4 M777 Propellants

Click the Save Icon

2.6.4 Gun Copy

We need to finish creating the battery by building the last 5 guns. To do this, **collapse the files under 1 1 A BTRY 1ST BN 10TH MAR.**

Right click on the 1 1 A BTRY 1ST BN 10TH MAR file.

Select Copy…

Click the Select All button

Highlight 2 1 A BTRY 1ST BN 10TH MAR and select OK

Repeat GUN COPY for

3 1 A BTRY 1ST BN 10TH MAR

4 2 A BTRY 1ST BN 10TH MAR

5 2 A BTRY 1ST BN 10TH MAR

6 2 A BTRY 1ST BN 10TH MAR

2.7 AFATDS M120 BATTERY SETUP

Disclaimer – This section will not show you how to install software, troubleshoot problems, or set-up anything other than an M120 firing battery.

Select **Start->AFATDS->USMC**

You will now see the Startup Progress bar Indicator…

You will get a dialog box that says Tube Strength Selection. **Select the 3x6 option and click Set.**

When the Multi-station OPFAC Name dialog comes up, just **select OK** with nothing in the text section and keep waiting...

The Unit Configuration Dialog is the next window to deal with. This will establish what role this AFATDS is playing. For the Unit ID **select the box next to it and click on the Select…** option.

When the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type **10TH and select Apply**

Select the BOC B BTRY 1ST BN 10TH MAR entry and then **select OK**

Back at the Unit Configuration window **select the box next to Unit Role and press the Select…** option

Select FA CP/FDC and press OK

Select the entry under Workstation (This is located a little over half way down the dialog box)

Edit the text box next to Workstation Name to reflect BOC B.

Now **select Activate** at the bottom of the dialog box.

This takes 30 to 60 seconds…

Now **select OK**

You might get a bunch of alerts about deleting active targets. This is normal. Go ahead and select Delete and clear out the message alerts by highlighting them and clicking on Delete.

After AFATDS startup completes, a map and the AFATDS Main Menu Bar will be displayed.

All menu selections will be referencing the uppermost menu. Not the Menu for the Tactical Map. We will not be using the Tactical Map's Menu for this document.

Select the fourth Icon from the left that looks like a handset.

This will bring up the Communications Workspace dialog

First thing to do is to create a configuration and make it current. To do this **click on Options->New…**

In the pop-up box **name your configuration (JSAF) and click OK**.

You will see that it is created in the left frame. **Highlight the (JSAF)** entry. **Click on Options->MakeCurrent**.

For the save current configuration, **Select yes**.

Now we need to create a network configuration. To do this **click on Network->New->IP->Ethernet/INC…**

This will bring up the IP Network Information dialog box. Give it a **Network Name**. Give it a **Hostname**. Now enter the **IP address** you want the AFATDS to have along with the **Subnet Address** Mask. Now select OK.

Now we have to associate the Network configuration with a hardware interface. To do this we need to **select the Communications Devices Tab**.

Under the column Communication Device we want to find and entry for PRIMARY LAN that has no entry under the Assigned Network column. **Click on the down arrow and select the name given for the IP Network**.

Go back to the Network Data Tab.

Select the newly created Network Name and click ON. (This will take a couple of minutes)

2.7.1 Build Gun Comm Table

Now that the network is created and active, we want to build the 6 guns in the comms workspace. At the bottom of the Communications Workspace dialog, **select the Add… option**.

We are going to select the 6 guns defined for B BTRY. First **click on 1 1 B BTRY 1ST BN 10TH MAR** now **hold down the shift key and click on 6 2 B BTRY 1ST BN 10TH MAR**. With all six guns highlighted, **select OK**.

Now, under the Destination Unit column **select the 1 1 B BTRY 1ST BN 10TH MAR and click on Edit…**

Select the box next to Via: and click Select…

Select the Network Name and click OK.

Now, **enter the IP address of the JLVCDT computer** where you see Internet Address.

Select OK.

Select the next gun 2 1 B BTRY 1ST BN 10TH MAR and select Edit…

Select the Indirect Radio button.

Select the box next to Via and click Select…

At the Select Unit dialog, **click on 1 1 B BTRY 1ST BN 10TH MAR and click OK**.

Now **click OK**.

Go back to BUIILD GUN COMM TABLE and repeat for the last 4 Guns.

If the JLVCDT is up, you can send test messages. JSAF does not have to be running in order for the tests to be successful.

You can now **close the Communication Workspace dialog**.

In the Communication Workspace **Select Options->Exit**.

Select Situations->Current

The Map will zoom into the ocean. **Select the Globe Icon**

Select Map->DisplayMap

Select Map->Overlays->InUse

Select Add… Highlight SOP and click OK.

Click Apply and then click OK

2.7.2 Create BOC

Now we need to setup the units that we are working with. From the AFATDS Current Menu Bar **Click Units->Workspace…**

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

The filter for the BOC should still be applied. If not, refer to the top of this section for setting the filter

The first unit we are going to setup is for our AFATDS unit. **Select BOC B BTRY 1ST BN 10TH MAR.** Now, **select the box next to Unit Type** and **click on Other.**

Click OK

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	FDC
Echelon	Battery
Function	Field Artillery Marine

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Click the save icon.

Now we need to create the individual guns that are going to be simulated in JSAF.

2.7.3 Create Guns

Click on the New Friendly Unit… Icon

Highlight the unit 1 1 B BTRY 1ST BN 10TH MAR, and for the Unit Type **select Mortar** and **select OK**.

The next four selections will be the box next to the name.

Entry	*Selection*
Service	USMC
Role	Unit
Echelon	Section
Function	Mortar

Cut and Paste a location from the map to the Current Location entry.

Double click the file under General called **General Data**

For Current Command Unit ID: **select BOC B BTRY 1ST BN 10th MAR**

For Current Supported Unit ID: select the same unit

Now **double click** the file under Detail called **Detailed Data**

Select M120 for Weapon Model

Check that Left Azimuth is 0 and Right Azimuth is 6400.

In the Weapon Data section **set Authorized to 1, Operational to 1, and On Hand to 1**

Click the save icon.

This will create more configuration files for this unit. The only one to worry about right now is the On Hand file under the Ammunition section. **Double Click the Ammunition->OnHand file**.

At the bottom **select New…**

Here is where we are going to tell AFATDS what munitions are available. I will put this information in a table format. Each line in this table is one full entry. **Once all the information is entered on a line, you will select OK. You will then select New… and enter information for the next line.**

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
HE	M933	A	AA	200	200
WP	M929	C	CC	200	200
ILLUM VL	M930	I	II	200	200

Figure 2-5 M120 Projectiles

Click the Save Icon

2.7.4 Gun Copy

We need to finish creating the battery by building the last 5 guns. To do this, **collapse the files under 1 1 B BTRY 1ST BN 10TH MAR.**

Right click on the 1 1 B BTRY 1ST BN 10TH MAR file.

Select Copy…

Click the Select All button

Highlight 2 1 B BTRY 1ST BN 10TH MAR and select OK

Repeat GUN COPY for

3 1 B BTRY 1ST BN 10TH MAR

4 2 B BTRY 1ST BN 10TH MAR

5 2 B BTRY 1ST BN 10TH MAR

6 2 B BTRY 1ST BN 10TH MAR

2.8 AFATDS 81MM BATTERY SETUP

Disclaimer – This section will not show you how to install software, troubleshoot problems, or set-up anything other than an 81mm firing battery.

Select **Start->AFATDS->USMC**

You will now see the Startup Progress bar Indicator…

You will get a dialog box that says Tube Strength Selection. **Select the 3x6 option and click Set.**

When the Multi-station OPFAC Name dialog comes up, just **select OK** with nothing in the text section and keep waiting...

The Unit Configuration Dialog is the next window to deal with. This will establish what role this AFATDS is playing. For the Unit ID **select the box next to it and click on the Select…** option.

When the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type **10TH and select Apply**

Select the BOC C BTRY 1ST BN 10TH MAR entry and then **select OK**

Back at the Unit Configuration window **select the box next to Unit Role and press the Select…** option

Select FA CP/FDC and press OK

Select the entry under Workstation (This is located a little over half way down the dialog box)

Edit the text box next to Workstation Name to reflect BOC C.

Now **select Activate** at the bottom of the dialog box.

This takes 30 to 60 seconds…

Now **select OK**

You might get a bunch of alerts about deleting active targets. This is normal. Go ahead and select Delete and clear out the message alerts by highlighting them and clicking on Delete.

After AFATDS startup completes, a map and the AFATDS Main Menu Bar will be displayed.

All menu selections will be referencing the uppermost menu. Not the Menu for the Tactical Map. We will not be using the Tactical Map's Menu for this document.

Select the fourth Icon from the left that looks like a handset.

This will bring up the Communications Workspace dialog

First thing to do is to create a configuration and make it current. To do this **click on Options->New…**

In the pop-up box **name your configuration (JSAF) and click OK**.

You will see that it is created in the left frame. **Highlight the (JSAF)** entry. **Click on Options->MakeCurrent**.

For the save current configuration, **Select yes**.

Now we need to create a network configuration. To do this **click on Network->New->IP->Ethernet/INC…**

This will bring up the IP Network Information dialog box. Give it a **Network Name**. Give it a **Hostname**. Now enter the **IP address** you want the AFATDS to have along with the **Subnet Address** Mask. Now select OK.

Now we have to associate the Network configuration with a hardware interface. To do this we need to **select the Communications Devices Tab**.

Under the column Communication Device we want to find and entry for PRIMARY LAN that has no entry under the Assigned Network column. **Click on the down arrow and select the name given for the IP Network**.

Go back to the Network Data Tab.

Select the newly created Network Name and click ON. (This will take a couple of minutes)

2.8.1 Build Gun Comm Table

Now that the network is created and active, we want to build the 6 guns in the comms workspace. At the bottom of the Communications Workspace dialog, **select the Add… option**.

We are going to select the 6 guns defined for C BTRY. First **click on 1 1 C BTRY 1ST BN 10TH MAR** now **hold down the shift key and click on 6 2 C BTRY 1ST BN 10TH MAR**. With all six guns highlighted, **select OK**.

Now, under the Destination Unit column **select the 1 1 C BTRY 1ST BN 10TH MAR and click on Edit…**

Select the box next to Via: and click Select…

Select the Network Name and click OK.

Now, **enter the IP address of the JLVCDT computer** where you see Internet Address.

Select OK.

Select the next gun 2 1 C BTRY 1ST BN 10TH MAR and select Edit…

Select the Indirect Radio button.

Select the box next to Via and click Select…

At the Select Unit dialog, **click on 1 1 C BTRY 1ST BN 10TH MAR and click OK**.

Now **click OK**.

Go back to BUIILD GUN COMM TABLE and repeat for the last 4 Guns.

If the JLVCDT is up, you can send test messages. JSAF does not have to be running in order for the tests to be successful.

You can now **close the Communication Workspace dialog.**

In the Communications Workspace **Select Options->Exit.**

Select Situations->Current

The Map will zoom into the ocean. **Select the Globe Icon**

Select Map->DisplayMap

Select Map->Overlays->InUse

Select Add… Highlight SOP and click OK.

Click Apply and then click OK

2.8.2 Create BOC

Now we need to setup the units that we are working with. From the AFATDS Current Menu Bar **Click Units->Workspace…**

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

The filter for the BOC should still be applied. If not, refer to the top of this section for setting the filter

The first unit we are going to setup is for our AFATDS unit. **Select BOC C BTRY 1ST BN 10TH MAR.** Now, **select the box next to Unit Type** and **click on Other.**

Click OK

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	FDC
Echelon	Battery
Function	Field Artillery Marine

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Click the save icon.

Now we need to create the individual guns that are going to be simulated in JSAF.

2.8.3 Create Guns

Click on the New Friendly Unit… Icon

Highlight the unit 1 1 C BTRY 1ST BN 10TH MAR, and for the Unit Type **select Mortar** and **select OK**.

The next four selections will be the box next to the name.

Entry	*Selection*
Service	USMC
Role	Unit
Echelon	Section
Function	Mortar

Cut and Paste a location from the map to the Current Location entry.

Double click the file under General called **General Data**

For Current Command Unit ID: **select BOC C BTRY 1ST BN 10th MAR**

For Current Supported Unit ID: select the same unit

Now **double click** the file under Detail called **Detailed Data**

Select M252 for Weapon Model

Check that Left Azimuth is 0 and Right Azimuth is 6400.

In the Weapon Data section **set Authorized to 1, Operational to 1, and On Hand to 1**

Click the save icon.

This will create more configuration files for this unit. The only one to worry about right now is the On Hand file under the Ammunition section. **Double Click the Ammunition->OnHand file**.

At the bottom **select New…**

Here is where we are going to tell AFATDS what munitions are available. I will put this information in a table format. Each line in this table is one full entry. **Once all the information is entered on a line, you will select OK. You will then select New… and enter information for the next line.**

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
HE	M889A1	A	AA	200	200
RP	M819	C	CC	200	200
ILLUM VL	M853A1	I	II	200	200

Figure 2-6 M252 Projectiles

Click the Save Icon

2.8.4 Gun Copy

We need to finish creating the battery by building the last 5 guns. To do this, **collapse the files under 1 1 C BTRY 1ST BN 10TH MAR.**

Right click on the 1 1 C BTRY 1st BN 10TH MAR file.

Select Copy…

Click the Select All button

Highlight 2 1 C BTRY 1ST BN 10TH MAR and select OK

Repeat GUN COPY for

3 1 C BTRY 1ST BN 10TH MAR

4 2 C BTRY 1ST BN 10TH MAR

5 2 C BTRY 1ST BN 10TH MAR

6 2 C BTRY 1ST BN 10TH MAR

2.9 AFATDS HIMARS BATTERY SETUP

Disclaimer – This section will not show you how to install software, troubleshoot problems, or set-up anything other than an HIMARS firing battery.

Select **Start->AFATDS->USMC**

2.10 YOU WILL NOW SEE THE STARTUP PROGRESS BAR INDICATOR…

You will get a dialog box that says Tube Strength Selection. **Select the 3x6 option and click Set.**

When the Multi-station OPFAC Name dialog comes up, just **select OK** with nothing in the text section and keep waiting...

The Unit Configuration Dialog is the next window to deal with. This will establish what role this AFATDS is playing. For the Unit ID **select the box next to it and click on the Select…** option.

When the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type **10TH and select Apply**

Select the BOC R BTRY 5TH BN 10TH MAR entry and then **select OK**

Back at the Unit Configuration window **select the box next to Unit Role and press the Select…** option

Select FA CP/FDC and press OK

Select the entry under Workstation (This is located a little over half way down the dialog box)

Edit the text box next to Workstation Name to reflect BOC R.

Now **select Activate** at the bottom of the dialog box.

This takes 30 to 60 seconds…

Now **select OK**

You might get a bunch of alerts about deleting active targets. This is normal. Go ahead and select Delete and clear out the message alerts by highlighting them and clicking on Delete.

After AFATDS startup completes, a map and the AFATDS Main Menu Bar will be displayed.

All menu selections will be referencing the uppermost menu. Not the Menu for the Tactical Map. We will not be using the Tactical Map's Menu for this document.

Select the fourth Icon from the left that looks like a handset.

This will bring up the Communications Workspace dialog

First thing to do is to create a configuration and make it current. To do this **click on Options->New…**

In the pop-up box **name your configuration (JSAF) and click OK**.

You will see that it is created in the left frame. **Highlight the (JSAF)** entry. **Click on Options->MakeCurrent**.

For the save current configuration, **Select yes**.

Now we need to create a network configuration. To do this **click on Network->New->IP->Ethernet/INC…**

This will bring up the IP Network Information dialog box. Give it a **Network Name**. Give it a **Hostname**. Now enter the **IP address** you want the AFATDS to have along with the **Subnet Address** Mask. Now select OK.

Now we have to associate the Network configuration with a hardware interface. To do this we need to **select the Communications Devices Tab**.

Under the column Communication Device we want to find and entry for PRIMARY LAN that has no entry under the Assigned Network column. **Click on the down arrow and select the name given for the IP Network**.

Go back to the Network Data Tab.

Select the newly created Network Name and click ON. (This will take a couple of minutes)

2.10.1 Build Gun Comm Table

Now that the network is created and active, we want to build the 6 guns in the comms workspace. At the bottom of the Communications Workspace dialog, **select the Add… option**.

We are going to select the 6 guns defined for A BTRY. First **click on 1 1 R BTRY 5TH BN 10TH MAR** now **hold down the shift key and click on 6 2 R BTRY 5th BN 10TH MAR**. With all six guns highlighted, **select OK**.

Now, under the Destination Unit column **select the 1 1 R BTRY 5TH BN 10TH MAR and click on Edit…**

Select the box next to Via: and click Select…

Select the Network Name and click OK.

Now, **enter the IP address of the JLVCDT computer** where you see Internet Address.

Select OK.

Select the next gun 2 1 R BTRY 5TH BN 10TH MAR and select Edit…

Select the Indirect Radio button.

Select the box next to Via and click Select…

At the Select Unit dialog, **click on 1 1 R BTRY 5TH BN 10TH MAR and click OK**.

Now **click OK**.

Go back to BUIILD GUN COMM TABLE and repeat for the last 4 Guns.

If the JLVCDT is up, you can send test messages. JSAF does not have to be running in order for the tests to be successful.

You can now **close the Communication Workspace dialog.**

In the Communications Workspace **Select Options->Exit.**

Select Situations->Current

The Map will zoom into the ocean. Select the Globe Icon

Select Map->DisplayMap

Select Map->Overlays->InUse

Select Add… Highlight SOP and click OK.

Click Apply and then click OK

2.10.2 Create BOC

Now we need to setup the units that we are working with. From the AFATDS Current Menu Bar **Click Units->Workspace…**

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

The filter for the BOC should still be applied. If not, refer to the top of this section for setting the filter

The first unit we are going to setup is for our AFATDS unit. **Select BOC R BTRY 5TH BN 10TH MAR.** Now, **select the box next to Unit Type** and **click on Other.**

Click OK

The next four selections will be the box next to the *Entry*.

Entry	Selection
Service	USMC
Role	FDC
Echelon	Battery
Function	Field Artillery Marine

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Click the Save Icon

Now we need to create the individual guns that are going to be simulated in JSAF.

2.10.3 Create Guns

Click on the New Friendly Unit… Icon

Highlight the unit 1 1 R BTRY 5TH BN 10TH MAR, and for the Unit Type **select Rocket** and **select OK**.

The next four selections will be the box next to the name.

Entry	*Selection*
Service	USMC
Role	Unit
Echelon	Section
Function	Field Artillery MLRS

Cut and Paste a location from the map to the Current Location entry.

Double click the file under General called **General Data**

For Current Command Unit ID: **select BOC R BTRY 5th BN 10th MAR**

For Current Supported Unit ID: select the same unit

Now **double click** the file under Detail called **Detailed Data**

Select M270A1 for Weapon Model

Check that Left Azimuth is 0 and Right Azimuth is 6400.

In the Weapon Data section **set Authorized to 1, Operational to 1, and On Hand to 1**

Click the save icon.

This will create more configuration files for this unit. The only one to worry about right now is the On Hand file under the Ammunition section. **Double Click the Ammunition->Uploaded Rockets file**.

At the bottom **select New…**

Here is where we are going to tell AFATDS what munitions are available. Unlike the other weapons the Rockets are already listed. The only input required is to tell AFATDS how many of each is on hand. Select the first entry and click the Edit button. Enter a value of 100 into each field in the Posture Response Time On Hand box. Click OK. Repeat for each rocket through the MLRS DPICM Guided.

Click the Save Icon

2.10.4 Gun Copy

We need to finish creating the battery by building the last 5 guns. To do this, **collapse the files under the 1 1 R BTRY 5TH BN 10TH MAR.**

Right click on the 1 1 R BTRY 5TH BN 10TH MAR file.

Select Copy…

Click the Select All button

Highlight 2 1 R BTRY 5TH BN 10TH MAR and select OK

Repeat GUN COPY for

3 1 R BTRY 5TH BN 10TH MAR

4 2 R BTRY 5TH BN 10TH MAR

5 2 R BTRY 5TH BN 10TH MAR

6 2 R BTRY 5TH BN 10TH MAR

2.11 AFATDS M198 FDC SETUP

Disclaimer – This will show you how to setup the AFATDS for operations as a FDC controlling 6 M198 guns for operation in DVTE.

If you do not have a TACLINK or TCIM card installed, shutdown the machine, insert the TACLINK/TCIM to the *bottom* PCMCIA slot with a Wire Line Adapter attached, and start AFATDS back up.

Connect a 2-wire from the XMT/RCV A and B terminals to the GDU Interface's Wireline In/Out terminals.

Using a standard RS-232 cable, attach one end to the GDU Interface and the other end to the serial connect on the computer that is running JLVCDT.

Apply power to the GDU interface.

Refer to the *AFATDS Boot-Up Sequence*

After AFATDS has booted up, **click Start->AFATDS->USMC**

You will now see the Startup Progress bar Indicator…

You will get a dialog box that says Tube Strength Selection. **Select the 3x6 option and click Set.**

When the Multi-station OPFAC Name dialog comes up, just **select OK** with nothing in the text section and keep waiting...

The Unit Configuration Dialog is the next window to deal with. This will establish what role this AFATDS is playing. For the Unit ID **select the box next to it and click on the Select…** option.

When the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type **10TH and select Apply**

Select the FDC E BTRY 2NDBN 10TH MAR entry and then **select OK**

Back at the Unit Configuration window **select the box next to Unit Role and press the Select… option**

Select FU and press OK

Select the entry under Workstation (This is located a little over half way down the dialog box)

Edit the text box next to Workstation Name to reflect FDC E 210.

Now **select Activate** at the bottom of the dialog box.

This takes 30 to 60 seconds…

Now **select OK**

You might get a bunch of alerts about deleting active targets. This is normal. Go ahead and select Delete and clear out the message alerts by highlighting them and clicking on Delete.

After AFATDS startup completes, a map and the AFATDS Main Menu Bar will be displayed.

All menu selections will be referencing the uppermost menu. Not the Menu for the Tactical Map. We will not be using the Tactical Map's Menu for this document.

Select the fourth Icon from the left that looks like a handset.

This will bring up the Communications Workspace dialog

First thing to do is to create a configuration and make it current. To do this **click on Options->New…**

In the pop-up box **name your configuration (OrlandoConfig) and click OK**.

You will see that it is created in the left frame. **Highlight the OrlandoConfig** entry. **Click on Options->MakeCurrent**.

For the save current configuration, **Select yes**.

Now we need to create a network configuration. To do this **click on Network->New->Other…**

This will bring up the Net Channel Settings dialog box. Give it a **Network Name** *(GUNLOOP)*.

For the Protocol, **select GDU**.

For Media Device, **select 2 WIRE**.

Select OK.

Now we have to associate the Network configuration with a hardware interface. To do this we need to **select the Communications Devices Tab**.

Under the column Communication Device we want to find and entry for **PCMCIA 1 Ch1** that has no entry under the Assigned Network column. **Click on the down arrow and select the name given for the GDU Network**. *(GUNLOOP)*

Go back to the Network Data Tab.

Select the newly created Network Name and click ON. (This will take a couple of minutes)

We can now **close the Communication Workspace dialog.**

In the Communications Workspace **Select Options->Exit.**

Select Situations->Current

The Map will zoom into the ocean. **Select the Globe Icon**

Select Map->DisplayMap

Select Map->Overlays->InUse

Select Add… Highlight SOP and click OK.

Click Apply and then click OK

2.11.1 Create FDC

Now we need to setup the units that we are working with. From the AFATDS Current Menu Bar **Click Units->Workspace…**

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

The filter for the BOC should still be applied. If not, refer to the top of this section for setting the filter

Select FDC E BTRY 2NDBN 10TH MAR. Now, **select the box next to Unit Type** and **click on Cannon.**

Click OK.

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	FDC
Echelon	Battery
Function	Field Artillery Marine

Next to Higher Echelon ID, **type FDC E 210**

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Now **double click the Detailed Data file** in the left pane.

For Weapon Model, **select M198**

Check that Left Azimuth is 0 and Right Azimuth is 6399.

In the Weapon Data section **set Authorized to 6, Operational to 6, and On Hand to 6**

Click the save icon.

Now we need to add guns to the FDC.

Double click the Weapon file.

Click New

For Bumper Number **type GUN1**

Repeat the previous two steps **for GUN2 through GUN6**.

Double Click the Ammunition->OnHand file.

At the bottom **select New…**

Here is where we are going to tell AFATDS what munitions are available. I will put this information in a table format. Each line in this table is one full entry. **Once all the information is entered on a line, you will select OK. You will then select New… and enter information for the next line.**

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
HE	M107NC	A	AA	200	200
WP	M110A2	C	CC	200	200

Figure 2-7 M198 Projectiles

Now select the Fuzes tab and enter the following…

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
PD	M557	P	PP	200	200

Figure 2-8 M198 Fuzes

Now select the Propellants tab and enter the following…

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
GB	M3A1	G	GG	200	200
WB	M4A2	W	WW	200	200
RB	M119A2	R	RR	200	200
RB	M203	S	SS	200	200

Figure 2-9 M198 Propellants

Click the Save Icon

Before firing any missions, you must calculate the guns positions. To do this, use the Battery Lay Data box in JSAF to get location information.

2.12 AFATDS M198 FSCC SETUP

Disclaimer – This will show you how to setup the AFATDS for operations as a FSCC controlling a FDC with M198 guns for operation in DVTE.

After AFATDS has booted up, **click Start->AFATDS->USMC**

You will now see the Startup Progress bar Indicator…

You will get a dialog box that says Tube Strength Selection. **Select the 3x6 option and click Set.**

When the Multi-station OPFAC Name dialog comes up, just **select OK** with nothing in the text section and keep waiting...

The Unit Configuration Dialog is the next window to deal with. This will establish what role this AFATDS is playing. For the Unit ID **select the box next to it and click on the Select…** option.

When the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type **2 and select Apply**

Select the FSCC 1ST BN 2DMAR *(URN 2900262)* entry and then **select OK**

Back at the Unit Configuration window **select the box next to Unit Role and press the Select…** option

Select FSE/FSCC/SACC and press OK

Select the entry under Workstation (This is located a little over half way down the dialog box)

Edit the text box next to Workstation Name to reflect FSCC12.

Now **select Activate** at the bottom of the dialog box.

This takes 30 to 60 seconds…

Now **select OK**

You might get a bunch of alerts about deleting active targets. This is normal. Go ahead and select Delete and clear out the message alerts by highlighting them and clicking on Delete.

After AFATDS startup completes, a map and the AFATDS Main Menu Bar will be displayed.

All menu selections will be referencing the uppermost menu. Not the Menu for the Tactical Map. We will not be using the Tactical Map's Menu for this document.

Select the fourth Icon from the left that looks like a handset.

This will bring up the Communications Workspace dialog

First thing to do is to create a configuration and make it current. To do this **click on Options->New…**

In the pop-up box **name your configuration (OrlandoConfig) and click OK**.

You will see that it is created in the left frame. **Highlight the OrlandoConfig** entry. **Click on Options->MakeCurrent**.

For the save current configuration, **Select yes**.

Now we need to create a network configuration. To do this **click on Network->New->IP->Ethernet/INC…**

This will bring up the IP Network Information dialog box. Give it a **Network Name**. Give it a **Hostname**. Now enter the **IP address** you want the AFATDS to have along with the **Subnet Address** Mask. Now select OK.

Now we have to associate the Network configuration with a hardware interface. To do this we need to **select the Communications Devices Tab**.

Under the column Communication Device we want to find and entry for PRIMARY LAN that has no entry under the Assigned Network column. **Click on the down arrow and select the name given for the IP Network**.

Go back to the Network Data Tab.

Select the newly created Network Name and click ON. (This will take a couple of minutes)

2.12.1 Build Gun Comm Table

Now that the network is created and active, we want to build the FDC in the comms workspace. At the bottom of the Communications Workspace dialog, **select the Add… option**.

If the filter is not set when the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type 10 **and select Apply**

Ensure System Type for the FDC is 47001C/VMFR5. If it is not, refer to section 2.3 “Editing the JMUL (Joint Master Unit List) to modify accordingly.

Select the FDC A BTRY 1ST BN 10TH MAR *(URN 2237321)* entry and then **select OK**

Now, under the Destination Unit column **select the FDC A BTRY 1ST BN 10TH MAR and click on Edit…**

Select the box next to Via: and click Select…

Select the Network Name and click OK.

Now, **enter the IP address of the JLVCDT computer** where you see Internet Address.

Select OK.

We can now **close the Communication Workspace dialog**.

In the Communications Workspace **Select Options->Exit**.

Options->Exit.

Select Situations->Current

The Map will zoom into the ocean. **Select the Globe Icon**

Select Map->DisplayMap

Select Map->Overlays->InUse

Select Add… Highlight SOP and click OK.

Click Apply and then click OK

2.12.2 Create FSCC

Now we need to setup the units that we are working with. From the AFATDS Current Menu Bar **Click Units->Workspace…**

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

The filter for the FSCC should still be applied. If not, refer to the top of this section for setting the filter

Select FSCC 1STBN 10THMAR. Now, **select the box next to Unit Type** and **click on Other.**

Click OK.

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	FSCC
Echelon	Unit
Function	Field Marine Infantry

Next to Higher Echelon ID, **type FSCC 1B2MAR**

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Click the save icon.

Now we need to add FDC to the FSCC.

2.12.3 Create FDC

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

Refer to the top of this section for setting the filter.

To find the unit used in this example enter **2** in the Div entry for the filter.

Select FDC A BTRY 1STBN 10THMAR *(URN: 2237321).* Now, **select the box next to Unit Type** and **click on Cannon**.

Click OK.

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	FDC
Echelon	Battery
Function	Field Artillery Marine

Next to Higher Echelon ID, **type FDC A 110**

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Double click the Detailed Data file in the left pane.

In the **Current Command Unit ID** entry **select FSCC 1STBN 2NDMAR**

In the **Current Supported Unit ID** entry **select FSCC 1STBN 2NDMAR**

Now **double click the Detailed Data file** in the left pane.

For Weapon Model, **select M198**

Check that Left Azimuth is 0 and Right Azimuth is 6399.

In the Weapon Data section **set Authorized to 6, Operational to 6, and On Hand to 6**

Click the save icon.

Now we need to add guns to the FDC.

Double click the Weapon file in the Details Folder.

Click New

For Bumper Number **type GUN1**

Repeat the previous two steps **for GUN2 through GUN6**.

Double Click the Ammunition->OnHand file.

At the bottom **select New…**

Here is where we are going to tell AFATDS what munitions are available. I will put this information in a table format. Each line in this table is one full entry. **Once all the information is entered on a line, you will select OK. You will then select New… and enter information for the next line.**

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
HE	M107NC	A	AA	200	200
WP	M110A2	C	CC	200	200

Figure 2-10 M198 Projectiles

Now select the Fuzes tab and enter the following…

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
PD	M557	P	PP	200	200

Figure 2-11 M198 Fuzes

Now select the Propellants tab and enter the following…

CATEGORY	MODEL	LOT CODE	LOT NUMBER	AUTHORIZED	ON HAND
GB	M3A1	G	GG	200	200
WB	M4A2	W	WW	200	200
RB	M119A2	R	RR	200	200
RB	M203	S	SS	200	200

Figure 2-12 M198 Propellants

Click the Save Icon

2.13 AFATDS NAVAL GUNFIRE SETUP

Disclaimer – This will show you how to setup the AFATDS for operations as a FSCC controlling a Naval Gunfire for operation in DVTE.

After AFATDS has booted up, **click Start->AFATDS->USMC**

You will now see the Startup Progress bar Indicator…

You will get a dialog box that says Tube Strength Selection. **Select the 3x6 option and click Set.**

When the Multi-station OPFAC Name dialog comes up, just **select OK** with nothing in the text section and keep waiting...

The Unit Configuration Dialog is the next window to deal with. This will establish what role this AFATDS is playing. For the Unit ID **select the box next to it and click on the Select…** option.

When the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type **2 and select Apply**

Select the FSCC 1ST BN 2DMAR *(URN 2900262)* entry and then **select OK**

Back at the Unit Configuration window **select the box next to Unit Role and press the Select…** option

Select FSE/FSCC/SACC and press OK

Select the entry under Workstation (This is located a little over half way down the dialog box)

Edit the text box next to Workstation Name to reflect FSCC12.

Now **select Activate** at the bottom of the dialog box.

This takes 30 to 60 seconds…

Now **select OK**

You might get a bunch of alerts about deleting active targets. This is normal. Go ahead and select Delete and clear out the message alerts by highlighting them and clicking on Delete.

After AFATDS startup completes, a map and the AFATDS Main Menu Bar will be displayed.

All menu selections will be referencing the uppermost menu. Not the Menu for the Tactical Map. We will not be using the Tactical Map's Menu for this document.

Select the fourth Icon from the left that looks like a handset.

This will bring up the Communications Workspace dialog

First thing to do is to create a configuration and make it current. To do this **click on Options->New…**

In the pop-up box **name your configuration (OrlandoConfig) and click OK**.

You will see that it is created in the left frame. **Highlight the OrlandoConfig** entry. **Click on Options->MakeCurrent**.

For the save current configuration, **Select yes**.

Now we need to create a network configuration. To do this **click on Network->New->IP->Ethernet/INC…**

This will bring up the IP Network Information dialog box. Give it a **Network Name**. Give it a **Hostname**. Now enter the **IP address** you want the AFATDS to have along with the **Subnet Address** Mask. Now select OK.

Now we have to associate the Network configuration with a hardware interface. To do this we need to **select the Communications Devices Tab**.

Under the column Communication Device we want to find and entry for PRIMARY LAN that has no entry under the Assigned Network column. **Click on the down arrow and select the name given for the IP Network**.

Go back to the Network Data Tab.

Select the newly created Network Name and click ON. (This will take a couple of minutes)

2.13.1 Build NGF Comm Table

Now that the network is created and active, we want to build the ship in the comms workspace. At the bottom of the Communications Workspace dialog, **select the Add… option**.

If the filter is not set when the Select Unit dialog comes up **select the Filters tab**.

Leave the URN check box unchecked

Put a **check mark next to Unit ID** under the Filter By:

In the box under the Div entry type DDG **and select Apply**

Ensure System Type for the Shoup DDG86 is 47001C/VMFR5. If it is not, refer to section 2.3 “Editing the JMUL (Joint Master Unit List) to modify accordingly.

Select the SHOUP DDG86 *(URN 4010791)* entry and then **select OK**

Now, under the Destination Unit column **select the SHOUP DDG86 and click on Edit…**

Select the box next to Via: and click Select…

Select the Network Name and click OK.

Now, **enter the IP address of the JLVCDT computer** where you see Internet Address.

Select OK.

We can now **close the Communication Workspace dialog**.

In the Communications Workspace **Select Options->Exit**.

Options->Exit.

Select Situations->Current

The Map will zoom into the ocean. **Select the Globe Icon**

Select Map->DisplayMap

Select Map->Overlays->InUse

Select Add… Highlight SOP and click OK.

Click Apply and then click OK

2.13.2 Create FSCC

Now we need to setup the units that we are working with. From the AFATDS Current Menu Bar **Click Units->Workspace…**

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

The filter for the FSCC should still be applied. If not, refer to the top of this section for setting the filter

Select FSCC 1STBN 10THMAR. Now, **select the box next to Unit Type** and **click on Other.**

Click OK.

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	FSCC
Echelon	Unit

Function	Field Marine Infantry

Next to Higher Echelon ID, **type FSCC 1B2MAR**

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Click the save icon.

Now we need to add FDC to the FSCC.

2.13.3 Create NGF Unit

From the Unit Workspace Menu, **Select Options->New->NewFriendlyUnit**

Refer to the top of this section for setting the filter.

To find the unit used in this example enter **DDG** in the Div entry for the filter.

Select SHOUP DDG86 *(URN 4010791)*. Now, **select the box next to Unit Type** and **click on Naval Ship**.

Click OK.

The next four selections will be the box next to the *Entry*.

Entry	*Selection*
Service	USMC
Role	Sea Surface
Function	DDG51 Mod

Next to Ship Short Name, **type DDG86**

Now get a location from the map. To do this put the cursor in the general area, hold down the CTRL key and right click, move the cursor over the Current Location input area, hold down the CTRL key and middle click. This is how you copy and paste location data from the map.

Double click the Detailed Data file in the left pane.

In the **Current Command Unit ID** entry **select FSCC 1STBN 2NDMAR**

In the **Current Supported Unit ID** entry **select FSCC 1STBN 2NDMAR**

Now **double click the Detailed Data file** in the left pane.

In the Gun Weapon Data Section,

Enter **1 for Tubes Operational**

Enter **Ready for System Status**

In the Missile Weapon Data,

Enter **90 for Cells Operational**

Enter **Ready for System Status in the Land Attack Missle section**

Enter **Ready for System Status in the Cruise Missile section**

Click the save icon.

Double Click the Ammunition->Gun file.

Enter **200 for all the entries in the Authorized Quantity Column**

Enter **200 for all the entries in the On Hand Column**

Double Click the Ammunition->Missile file.

Enter **200 for all the entries in the Authorized Quantity Column**

Enter **200 for all the entries in the On Hand Column**

Click the Save Icon

3 JLVCDT GATEWAY SETUP

3.1 UNIT CONFIGURATION FILE

In order for JLVCDT to interoperate with other DVTE 2008 suite systems, you must first setup a unit configuration file that will provide the data translator with enough information to successfully translate and process C2C4 messages. The information contained within the configuration file allows the data translator to know who is sending the message, where the message is going, and the format of the recipient's native protocol. The configuration file is an Extensible Markup Language (XML) file.

3.1.1 Unit Entry

In order for JLVCDT to successfully translate the VMF messages between AFATDS and JSAF the following information is required.

- **Unit –** callsign as given to the vehicle/unit in JSAF during creation (i.e. 110A, 210F, etc). It must match exactly; it is case and white space sensitive.
- **URN –** Unit Reference Number, a unique number assigned to each vehicle/unit in AFATDS JMUL.
- **IP –** address of the computer running the JSAF that will be simulating this vehicle/unit.
- **System –** indicates the message protocol that should be used for communication with this entry.
- **Parent Unit –** commanding unit of this entry.
- **Unit Type –** indicates the type of function of the vehicle/unit entry.

3.1.2 Creating Entries

In each of the C4I/VMF plug-ins there is a section that allows the selection of a unit configuration file. If no file is has been created click the select button and give the file a name and open.

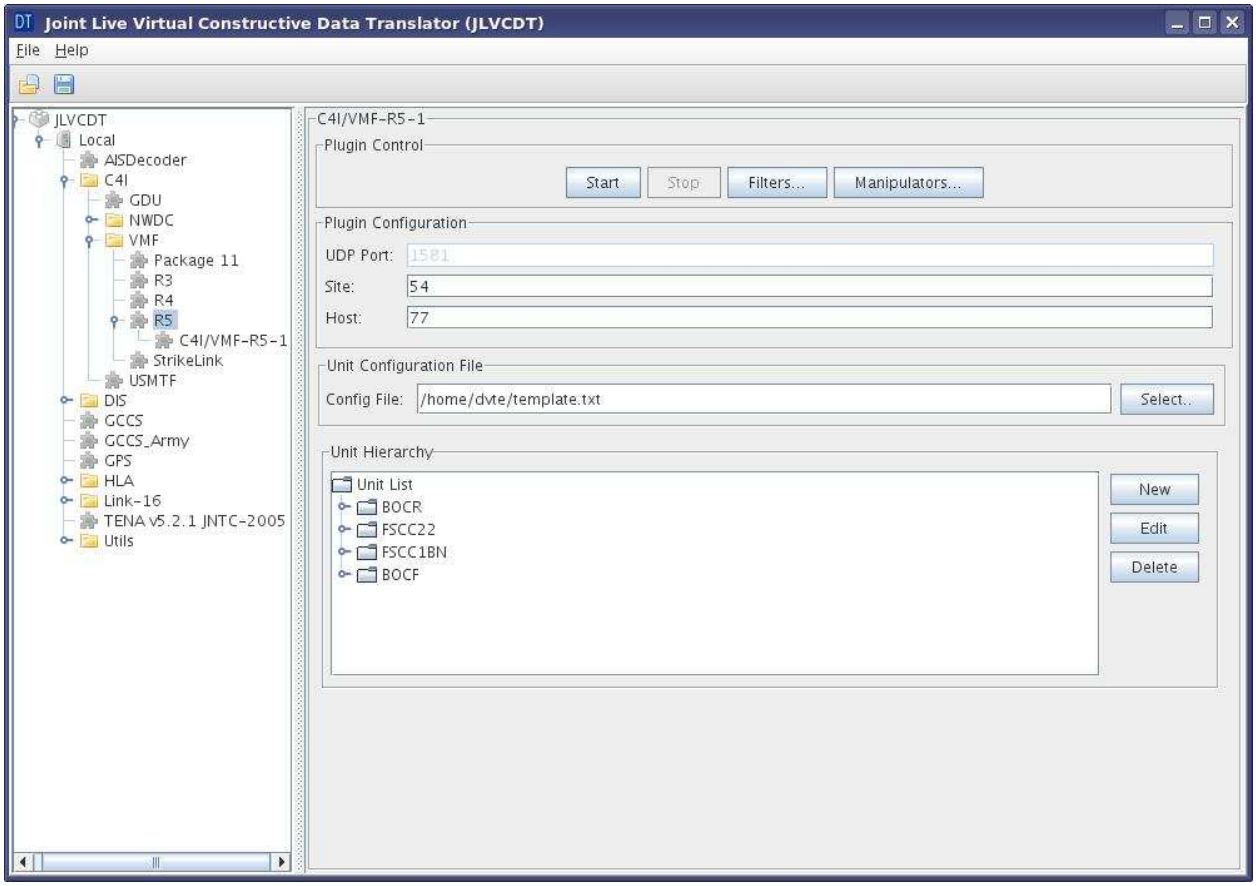

Figure 3-13 VMFR5 Plugin Window

In the Unit Hierarchy section click the new button and the following window will appear allowing the operator to enter the data explained in the previous section to build a new entry.

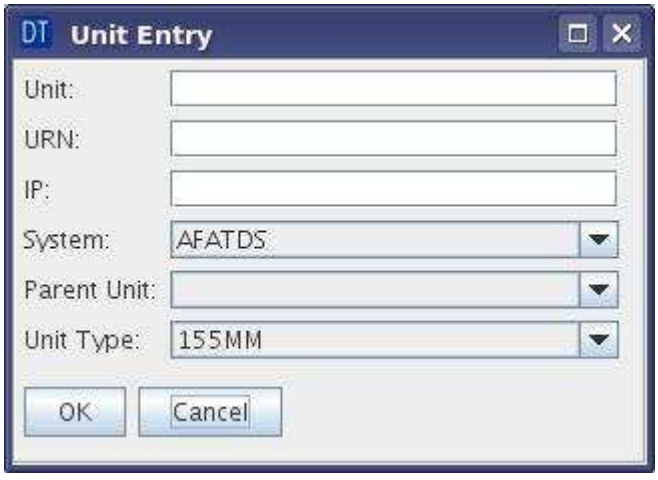

Figure 3-14 Unit Entry Window

After all the data is entered click OK and the new entry will show in the Unit Hierarchy tree view. Notice that if the newly created unit entry was assigned a Parent Unit they will be found by expanding the parent's entry in the tree.

3.2 RUNNING JLVCDT

Before running JLVCDT you must first compile the source code into an executable format. In order to do that you must have ANT installed on the machine as well as the latest JAVA (at least 1.5 or greater).

3.2.1 Running

- jlvcdt -rid_name=/usr/share/dvte/federations/v3_dvte/RTI-s_1.3_D18A.rid -DRTIPlugin=RTI-s_D18A_Linux_gcc_4.1.1

3.2.2 Plugins

1. Once JLVCDT is running you can add/start any number of "plug-ins" depending on your need.
2. First start the **HLA/DVTE** plug-in so that you can federate with the HLA network (JSAF).
    a. Expand the **HLA** tab by either double clicking on the folder or clicking the key icon to the left of the folder.
    b. Click on the "DVTE" entry in the tree. This will expand the window to the right and show three options allowing you to "Add/Remove/Rename"
    c. Click on the "Add" button to add an instance of the HLA plugin.
    d. You will now see an instance of the plug-in in the list box to the left of the buttons. Clicking on this instance will cause the plug-in control window to show. From here you can set federation properties for the HLA plug-in. For all purposes, set the **fedex** to that of the federation and set **Heartbeat** to 5 and **Timeout** to 0.
    e. Click on the "Start" button to start the plug-in. If you setup the plug-in correctly you should see text in the console stating your joining the specified fedex.

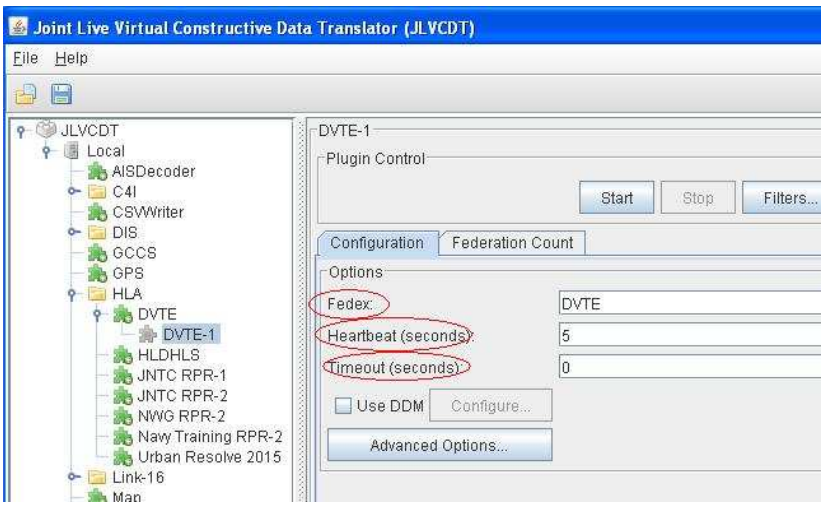

Figure 3-15 HLA Plugin Window

3. Next start the C4I plug-ins as needed in the same fashion.
    a. When starting each C4I plug-in, ensure you are using the appropriate Unit Configuration file, as specified by the file selector on the plug-in configuration window.

For instructions on setting up individual configurations for each C4I plug-in and interfacing them with C2 gear, refer to the sections in this document that deal with that specific scenario.

4 C2C4 FEATURES SUPPORT

4.1 M198 MARINE BATTERY (DVTE-GDU)

Munitions – M107NC, M825

Fuzes – M557, M762 (HOB=0)

Propellants – M3A1, M4A2, M119A2

Method Of Control – When Ready, At My Command, Time On Target (JSAF computer's system clock time), Final Protective Fires

Propellant lot codes must be G for M3A1, W for M4A2, and R for M119A2.

4.1.1 M198 Battery Configuration

JLVCDT – (*IP addresses are for example only. Refer to your comm. plan*)

Open or create a JLVCDT configure script that ends with an xml extension. Should be something similar to *jlvcdt_config.xml*. Make an entry similar to:

```
<entry>
        <unit_name>FSCC22</unit_name>
        <urn>2900267</urn>
        <parent_urn>2900267</parent_urn>
        <system>AFATDS</system>
        <ip_address>216.54.77.248</ip_address>
</entry>
<entry>
        <unit_name>210E</unit_name>
        <urn>2238569</urn>
        <parent_urn>2900267</parent_urn>
        <system>GDU</system>
        <ip_address>216.54.77.33</ip_address>
```

</entry>

AFATDS –

Modify the FDC entry in the JMUL that JSAF will simulate. Change it from an AFATDS system to a VMFr5 system. Set up the AFATDS as normal by creating the FDC and the FSCC units and set the Command Relationships.

JSAF –

- Locate on the terrain where you want the battery to be positioned.
- Click on the "Create units" icon and select the "M198 Marine Battery (DVTE-GDU)"
- Left click once on the map at the desired location to place the battery
- Make sure the call sign is set appropriate and matches JLVCDT entries. (110A, 210E, 510R, …)
- Set the formation. You will get best results with "SAM Square"
- Select Done

4.1.2 Controlling the M198 Battery

- Start JLVCDT modules VMFr5 and HLA. (Be sure to point to the right xml file)
- If not already, lay the JSAF M198 battery.
- Open the comm. window in AFATDS and do comm. checks
- Initiate a Fire Mission

VERY IMPORTANT –

We have seen instances when the battery will do an unwanted parallel sheaf pattern as opposed to the standard BCS. If this happens, use the scissor cutting tool "Delete objects" to remove the entities that belong to the M198 battery. Then, lay a new battery down and save the scenario.

4.2 M777 MARINE BATTERY

Munitions – M107NC, M483A1, M485A2, M825, M110E2

Fuzes – M557, M739, M732, M582

Propellants – M3A1, M4A2, M119A2, M203

Method Of Control – When Ready, At My Command

4.2.1 M777 Battery Configuration

JLVCDT – (*IP addresses are for example only. Refer to your comm. plan*)

Open or create a JLVCDT configure script that ends with an xml extension. Should be something similar to *jlvcdt_config.xml*. Make an entry similar to:

```
<entry>
  <unit_name>BOCA</unit_name>
  <urn>2237315</urn>
  <parent_urn>2900305</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.62</ip_address>
</entry>
<entry>
<unit_name>110A11</unit_name>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
   <unit_type>155MM</unit_type>
  <urn>2237331</urn>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110A12</unit_name>
  <urn>2237342</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
```

```
<entry>
  <unit_name>110A13</unit_name>
  <urn>2237353</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110A21</unit_name>
  <urn>2237364</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
<unit_name>110A22</unit_name>
  <urn>2237375</urn>
  <parent_urn>2237315</parent_urn>
  <system>VMFR5</system>
   <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110A23</unit_name>
  <urn>2237386</urn>
```

```
<parent_urn>2237315</parent_urn>
<system>VMFR5</system>
<unit_type>155MM</unit_type>
<ip_address>10.3.2.20</ip_address>
</entry>
```

AFATDS –

Set up the AFATDS as normal by creating the FDC and the M777 units and set the Command Relationships.

JSAF –

- Locate on the terrain where you want the battery to be positioned.
- Click on the "Create units" icon and select the "M777 Marine Battery"
- Left click once on the map at the desired location to place the battery
- Make sure the call sign is set appropriate and matches JLVCDT entries. (110A, 210E, 510R, …)
- Set the formation. You will get best results with "SAM Square"
- Select Done

4.2.2 Controlling the M777 Battery

- Start JLVCDT modules VMFr5 and HLA. (Be sure to point to the right xml file)
- If not already, lay the JSAF M777 battery.
- Open the comm. window in AFATDS and do comm. checks
- Initiate a Fire Mission

4.3 M120 MARINE BATTERY

Munitions – M933, M929, M930

Fuzes – N/A

Propellants – N/A

Method Of Control – When Ready, At My Command

4.3.1 M120 Battery Configuration

JLVCDT – (*IP addresses are for example only. Refer to your comm. plan*)

Open or create a JLVCDT configure script that ends with an xml extension. Should be something similar to *jlvcdt_config.xml*. Make an entry similar to:

```
<entry>
  <unit_name>BOCA</unit_name>
  <urn>2237315</urn>
  <parent_urn>2900305</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.62</ip_address>
</entry>
<entry>
<unit_name>110B11</unit_name>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
   <unit_type>155MM</unit_type>
  <urn>2237747</urn>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110B12</unit_name>
  <urn>2237758</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
```

```
<entry>
  <unit_name>110B13</unit_name>
  <urn>2237769</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110B21</unit_name>
  <urn>2237780</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
<unit_name>110B22</unit_name>
  <urn>2237791</urn>
  <parent_urn>2237315</parent_urn>
  <system>VMFR5</system>
   <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110B23</unit_name>
  <urn>2237802</urn>
```

```
<parent_urn>2237315</parent_urn>
<system>VMFR5</system>
<unit_type>155MM</unit_type>
<ip_address>10.3.2.20</ip_address>
</entry>
```

AFATDS –

Set up the AFATDS as normal by creating the FDC and the M120 units and set the Command Relationships.

JSAF –

- Locate on the terrain where you want the battery to be positioned.
- Click on the "Create units" icon and select the "M120 Marine Battery"
- Left click once on the map at the desired location to place the battery
- Make sure the call sign is set appropriate and matches JLVCDT entries. (110A, 210E, 510R, …)
- Set the formation. You will get best results with "Wedge"
- Select Done

4.3.2 Controlling the M120 Battery

- Start JLVCDT modules VMFr5 and HLA. (Be sure to point to the right xml file)
- If not already, lay the JSAF M120 battery.
- Open the comm. window in AFATDS and do comm. checks
- Initiate a Fire Mission

4.4 81MM MORTAR BATTERY

Munitions – M889A1, M375A2, M853A1, M819

Fuzes – N/A

Propellants – N/A

Method Of Control – When Ready, At My Command

4.4.1 M777 Battery Configuration

JLVCDT – (*IP addresses are for example only. Refer to your comm. plan*)

Open or create a JLVCDT configure script that ends with an xml extension. Should be something similar to *jlvcdt_config.xml*. Make an entry similar to:

```
<entry>
  <unit_name>BOCA</unit_name>
  <urn>2237315</urn>
  <parent_urn>2900305</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.62</ip_address>
</entry>
<entry>
<unit_name>110C11</unit_name>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
   <unit_type>155MM</unit_type>
  <urn>2238163</urn>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110C12</unit_name>
  <urn>2238174</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
```

```
<entry>
  <unit_name>110C13</unit_name>
  <urn>2238185</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110C21</unit_name>
  <urn>2238196</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
<unit_name>110C22</unit_name>
  <urn>2238207</urn>
  <parent_urn>2237315</parent_urn>
  <system>VMFR5</system>
   <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>110C23</unit_name>
  <urn>2238218</urn>
```

```
<parent_urn>2237315</parent_urn>
<system>VMFR5</system>
<unit_type>155MM</unit_type>
<ip_address>10.3.2.20</ip_address>
</entry>
```

AFATDS –

Set up the AFATDS as normal by creating the FDC and the 81mm units and set the Command Relationships.

JSAF –

- Locate on the terrain where you want the battery to be positioned.
- Click on the "Create units" icon and select the "81MM Mortar Battery"
- Left click once on the map at the desired location to place the battery
- Make sure the call sign is set appropriate and matches JLVCDT entries. (110A, 210E, 510R, …)
- Set the formation. You will get best results with "Wedge"
- Select Done

4.4.2 Controlling the 81MM Battery

- Start JLVCDT modules VMFr5 and HLA. (Be sure to point to the right xml file)
- If not already, lay the JSAF 81mm battery.
- Open the comm. window in AFATDS and do comm. checks
- Initiate a Fire Mission

4.5 HIMARS MARINE BATTERY

Munitions – M26

Fuzes – N/A

Propellants – N/A

Method Of Control – When Ready, At My Command

4.5.1 HIMARS Battery Configuration

JLVCDT – (*IP addresses are for example only. Refer to your comm. plan*)

Open or create a JLVCDT configure script that ends with an xml extension. Should be something similar to *jlvcdt_config.xml*. Make an entry similar to:

```
<entry>
  <unit_name>BOCA</unit_name>
  <urn>2237315</urn>
  <parent_urn>2900305</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.62</ip_address>
</entry>
<entry>
<unit_name>510R11</unit_name>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
   <unit_type>155MM</unit_type>
  <urn>2241075</urn>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>510R12</unit_name>
  <urn>2241086</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
```

```
<entry>
  <unit_name>510R13</unit_name>
  <urn>2241097</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>510R21</unit_name>
  <urn>2241108</urn>
  <parent_urn>2237315</parent_urn>
  <system>AFATDS</system>
  <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
<unit_name>510R22</unit_name>
  <urn>2241119</urn>
  <parent_urn>2237315</parent_urn>
  <system>VMFR5</system>
   <unit_type>155MM</unit_type>
   <ip_address>10.3.2.20</ip_address>
</entry>
<entry>
  <unit_name>510B23</unit_name>
  <urn>2241130</urn>
```

```
<parent_urn>2237315</parent_urn>
<system>VMFR5</system>
<unit_type>155MM</unit_type>
<ip_address>10.3.2.20</ip_address>
</entry>
```

AFATDS –

Set up the AFATDS as normal by creating the FDC and the HIMARS units and set the Command Relationships.

JSAF –

- Locate on the terrain where you want the battery to be positioned.
- Click on the "Create units" icon and select the "HIMARS (MLRS) Marine Battery"
- Left click once on the map at the desired location to place the battery
- Make sure the call sign is set appropriate and matches JLVCDT entries. (110A, 210E, 510R, …)
- Set the formation. You will get best results with "Wedge"
- Select Done

4.5.2 Controlling the HIMARS Battery

- Start JLVCDT modules VMFr5 and HLA. (Be sure to point to the right xml file)
- If not already, lay the JSAF HIMARS battery.
- Open the comm. window in AFATDS and do comm. checks
- Initiate a Fire Mission

4.6 NAVAL GUN FIRE

Munitions – HEPD, EGRM

Method Of Control – When Ready, At My Command

4.6.1 NGF Configuration

JLVCDT – (*IP addresses are for example only. Refer to your comm. plan*)

Open or create a JLVCDT configure script that ends with an xml extension. Should be something similar to *jlvcdt_config.xml*. Make an entry similar to:

```
<entry>
  <unit_name>DDG86</unit_name>
  <urn>4010786</urn>
  <parent_urn>2047501</parent_urn>
  <system>AFATDS</system>
  <unit_type>NAVAL</unit_type>
</entry>
```

AFATDS –

Set up the AFATDS as normal by creating the FSCC and the NFCS unit.

JSAF –

- Locate on the terrain where you want the ship to be positioned. YES, ships can sail across the desert…
- Click on the "Create units" icon and select the "DDG86 Shoup"
- Left click once on the map at the desired location to place the ship
- Make sure the call sign is set appropriate and matches JLVCDT entries. For this release it will only be **DDG86**.
- Select Done

4.6.2 Controlling the DDG86

- Start JLVCDT modules VMFr5 and HLA. (Be sure to point to the right xml file)
- If not already, lay the JSAF DDG86.
- Open the comm. window in AFATDS and do comm. checks
- Initiate a Fire Mission

4.7 CLOSE AIR SUPPORT

There are two different ways to run a CAS mission: digitally and verbally. A "digital CAS mission" is a mission in where the FAC-pilot communications are done digitally between StrikeLink and JSAF. A "verbal CAS mission" is a mission in which the FAC calls out information verbally to a JSAF operator,

who will enter the information from the FAC into JSAF to task the simulated flights. The following sections describe how to set up machines for and execute each type of mission.

4.7.1 Digital CAS Missions

4.7.1.1 Setup

1. **JSAF Setup**
    a. **Start JSAF.**
    b. **Open the Unit Editor**, and select **FA-18D Flt-of-2** (CAS behaviors are also supported for flights of 1 and 4).
        i. Pick a **location** for your unit (for this example, use: 11 SNU 72043 17192).
        ii. Pick a **callsign** for your unit (for this example, use: "FAD" – this will mean that your individual planes will be named "FAD1" and "FAD2".
        iii. If you want to do a **Type 1 CAS** mission (which is a CAS mission where the FAC can see both the target and the planes as they come in, and unguided bombs are used), then you do not have to set the plane loadouts. Optionally, you can select the **Mission/Weapons** tab of the unit editor and under **Choose a Loadout,** select **Type 1 CAS – F/A-18**.
        iv. If you want to do a **Type 2 CAS** mission (which is a CAS mission where the FAC cannot see both the target and the planes, and guided bombs are used), then you must select the **Mission/Weapons** tab of the unit editor and under **Choose a Loadout,** select **Type 2 CAS – F/A-18.**
        v. *Note: If you are going to change the loadout or callsign of the entities, you must do this before you click Done in the unit editor. Trying to alter these after the unit has already been laid down does not usually work.
        vi. Click **Done** in the unit editor.
    c. **Lay down a target**, e.g., a T80. For this example, put it at location: 11 SNT 65632 96584.
    d. **Create some Control Points in JSAF**. These are points of reference for the planes that indicate where they check-in with their FAC, ingress, egress, etc. In real life, these Control Points would be established beforehand and sent out to everyone. In our case, we can just put them where we want them. One strategy is to set a circle of Control Points around the target, roughly 8-12 nm away from the target. Then put a few Control Points further away. You can name them whatever you want. For CAS missions to work, the Control Points do not actually *have* to exist in JSAF, but they *must* exist in StrikeLink. Sometimes it's easier just to have them in both so you can see what is going on. For this example, use the JSAF Point editor to create control points in the following locations with the following names in JSAF:
        i. 11 SNU 72014 18020 (CHEVY)
        ii. 11 SNU 65155 07807 (HONDA)
        iii. 11 SNU 50378 02672 (NISSAN)
        iv. 11 SNT 48553 83480 (SUBARU)
        v. 11 SNT 74348 77719 (TOYOTA)
        vi. 11 SNU 78354 00532 (FORD)
    e. **Save the JSAF scenario** at this point so you can reuse what you've created.
2. **Observer Setup**
    CAS missions can be run with a virtual observer (using FACSim to simulate your observer) or with a constructive observer (using JSAF to simulate your observer). If you choose to use

FACSim, follow the FACSim Setup instructions below. Otherwise, follow the JSAF Observer instructions below.

a. FACSim Setup

i. Start the GenSim Launcher.
ii. At the top of the screen where it says **<Enter Username>**, enter a **callsign** for your FAC (e.g., FAC15).
iii. At the bottom right of the screen, click the **Advanced Options** button.
    1. In the **Marking field,** enter the **callsign** again (the same value that you used for UserName in the previous step.
    2. Make sure the **fedex** field is set to **DVTE**.
    3. Click **OK.**
iv. On the right side of the screen, **enter the location where you want the FAC to be in the MGRS** box. For this example, use: 11 SNT 66117 96502.
v. **Start FACSim by clicking the FAC/JTAC button** on the left side of the screen.
vi. If you plan to lase your target for the CAS mission, you will use your FACSim laser designator tool at the appropriate time.

b. JSAF Observer Setup

i. In JSAF, open the Unit Editor and select the **IC Laser Designator**. Set the **Callsign** and **Location.** For this example, use**:** 11 SNT 66117 96502 as the location. Click Done to create the unit.
ii. If you plan to lase your target for the CAS mission, these are the steps you need to take to order your FAC to lase:
    1. Select your IC Laser Designator vehicle and task him to do a **Ground Laser Designation** task.
    2. Set the **Designator Point** field to the point where you want your observer to move to before lasing the target. *This point MUST be different than the FAC's current location*. Put the point between the FAC's current location and the target's location, so the FAC will be facing the target when he finishes moving. The FAC must have a clear line of sight to the target from this point, and he must be within 450 meters of the target.
    3. Set the **Suspected Enemy Location** to the location of the target.
    4. Set the **Speed** to 10 knots (this is the speed at which the unit will move to the Designator Point).
    5. Set the **Laser Code** to 1688.
    6. Click **Done**. Put the task on order when you are ready for it to start.

c. StrikeLink Setup

i. Note: If you want to **set the time in JSAF**, you need to do that *before* StrikeLink is brought up, since StrikeLink's time is only set once, which is when it starts up (and the time is only set if you are connected to FACSim). So, if you want to set the time, do that now. You can set the time in JSAF with the following steps:
    1. Click the **Set Weather** tool button.
    2. Click the **Time** tab.
    3. Modify the **Time/Date** field by at least one second.
    4. Click **Done**.
ii. If this is the first time you have used this StrikeLink with DVTE, or if you are using FACSim to simulate your observer, then start the **StrikeLink Administration Tool**.

iii. If this is the first time you have used StrikeLink with DVTE, on the **Application State** tab, in the top right section called **Application Runtime State**, make sure the **Simulation/Training** radio button is selected, and that the **Preset** is "DVTE".
iv. If you are using FACSim, in the bottom right corner in the **GPS** section, for the **Name** field, select "FAC15" (the user name you entered in FACSim). This will connect StrikeLink to FACSim.
v. Click **OK.**

d. Starting StrikeLink

i. Start StrikeLink by double-clicking the icon on the Desktop.
ii. Click **OK** on the "C2PC Role-Based Logon" dialog box.
iii. Click **OK** on any other message boxes that may appear.
iv. Click the **Tools** menu. Select **Tools > StrikeLink** to open the StrikeLink injector. *Note: If "StrikeLink" is NOT an option in the first section of the menu, then select **Tools>Injector Manager**. **Check the box in the left panel next to StrikeLink**, and **click OK.** Then select **Tools > StrikeLink** to open the StrikeLink injector.*
v. Click **OK/Close** on any safety warnings that may pop up.
vi. Set up and activate a **communications network**:
    1. In the StrikeLink Injector Pane (left panel of the screen), click on the **COMM tab**.
    2. Select the **CH 1 folder**, and **click the New button** (the first button in the row at the top of the COMM tab).
        a. Enter a unique name in the **Name** field at the top (e.g., DVTE1).
        b. For **Platform**, choose **F-18**.
        c. For **Msg Rev**, choose **H2E+/19C**.
        d. For **Callsign**, enter **the callsign that you gave the FAC,** either in FACSim or in JSAF ("FAC15" in our example here).
        e. For **Link Address**, enter **a unique number** to use as the FAC's link address (use 15 for this case).
        f. For **URN**, enter a **unique number** to use as the FAC's URN (use 15 for this case).
        g. For **IP Address**, **enter a unique address** (use 1.1.1.15 for this case).
        h. Click **OK**.
    3. Double-click the **CH 1 folder**.
        a. In the **Channel Properties** dialog that pops up, for **Radio**, select "PRC-117F."
        b. Click **OK**.
    4. **Select the DVTE1 instance that appears below the CH 1 folder, and click the button with the green dot** in it to activate the comm channel (this is the 4th button in the row at the top of the **COMM** tab). This should cause a green dot to show up in front of "CH 1" and "DVTE1", meaning that the network is active. **Note: You'll have to click this button to start the network each time you start StrikeLink.**
vii. If you are not using FACSim, select the Observer button (the third button from the left in the toolbar above the map, with a blue rectangle on it) and then click on the map to set the observer's location. If you are using FACSim, ensure that the GPS button is depressed (2nd button from the right on the toolbar above the map), and the observer's location should be set automatically.
viii. Create **Control Points**.

1. In the vertical toolbar that appears between the StrikeLink Injector Pane (the left panel), **select the Control Point button** (the 4th button from the bottom with blue circles in it).
2. **Click on the map** somewhere in the terrain area. In the dialog box that shows up, **enter a name and location** that corresponds to a Control Point that you already created in JSAF, and **click OK**.
3. **Do this for all the control points** that you created earlier in JSAF.

ix. If you are using FACSim, connect to the FACSim laser range finder.
1. **Select StrikeLink > Lasers.**
2. In the Network port section, select **"FAC15"** (which represents your FACSim laser range finder) in the **Sensor Names** drop down box.

e. JLVCDT Setup

i. Start **JLVCDT**.

ii. Start the **HLA** plug-in:
1. Expand the **HLA** folder.
2. Select the **DVTE** plug-in, and click the **Add** button on the right window panel.
3. A new instance of the plug-in called **HLA-DVTE-1** should appear in the tree structure to the left below DVTE. Select the new instance.
4. Make sure that the **fedex** field in the right panel is set to **DVTE**. Click the **Start** button in the right panel.

i. Start the **StrikeLink** plug-in:
1. Expand the **C4I** folder.
2. Expand the **VMF** folder.
3. Select the **StrikeLink** plug-in, and click the **Add** button on the right window panel.
4. A new instance of the plug-in called **C4I/VMF-StrikeLink-1** should appear in the tree structure to the left below StrikeLink. Select the new instance.
5. In the **Unit Configuration File** section, you can either select an existing file, or type a path and name for a new one.
6. If you are creating a new one, then use the **New/Edit/Delete** buttons to create entries for your scenario in the Unit Hierarchy. You will need **one entry for the FAC**, and **one entry for each plane**. The following steps are examples for creating entries for this particular example:
   a. To create the FAC entry, use the values we set up in StrikeLink:
      i. Click the **New** button.
      ii. Set **Unit** to the FAC's callsign: FAC15.
      iii. Set **URN** to 15.
      iv. Set **IP** to 1.1.1.15.
      v. Set **Link Address** to 15.
   b. To create an entry for the **flight leader**:
      i. Click the **New** button.
      ii. Set **Unit** to the callsign of the plane (FAD1).
      iii. Set **URN** to something unique (e.g.: 70)
      iv. Set the **IP** address to the IP address of the machine simulating the plane (e.g., 10.1.10.1).
      v. Set the **Link Address** to something unique (e.g.: 70).
   c. To create an entry for the wingman:
      i. Click the New button.
      ii. Set **Unit** to the callsign of the plane (FAD2).

iii. Set **URN** to something unique (e.g.: 71).
iv. Set the **IP** address to the IP address of the machine simulating the plane (e.g., 10.1.10.1).
v. Set the **Link Address** to something unique (e.g.: 71).

7. Click the **Start** button in the right panel.

4.7.1.2 Executing a Digital CAS Mission

There are two useful resources to reference before/during CAS missions.

The first is the **StrikeLink manual**. There is a section in the manual called "StrikeLink and F/A-18 (19C and later) Digital CAS Mission Thread" which describes the CAS mission process from the StrikeLink point of view. This is helpful to reference while you are doing a CAS mission, as it provides pictures and explanations of what happens in StrikeLink during a CAS mission. You can ignore the first few steps relating to sending a Free Text message, because that is not necessary.

The second is the **TLDHS to FA-18 ICD**. In section "3.1.1.2.2: 19C OFP", there is a general explanation of the steps of a CAS mission. This is helpful to read before starting a CAS mission if you are unfamiliar with the real-world process.

1. In JSAF, **select the flight** you laid down so that it shows up in the unit editor. Task the unit to do a "**CAS Check-In" task**.
    a. For the **Forward Air Controller Callsign field**, enter the callsign of the FAC that you set up in StrikeLink ("FAC15" in our case).
    b. For **Control Point**, either select one of the control points that you created in JSAF, or click somewhere else on the map to create a new control point.
    c. If you are doing a Type 1 mission, you have the option to select Low Level w/Pop up or Low Level as the **Flight Profile**.
    d. Click **Done**, and put the unit on order.
    e. Note: If you **keep the flight unit selected** (the actual unit, not the individual vehicles), then you will see the mission geometries and points drawn on the JSAF screen during the mission.
2. The flight will fly to the Control Point, and when it gets there, **it will send an Aircraft On Station message** that will pop up on the JSAF PVD, and should show up as a pop up in StrikeLink (at this point you can be following the thread in the StrikeLink manual, it shows pictures of what these popups look like, etc.). Click **Add To Flight**, and then click **Yes**. This will add the planes to the Active folder in the FLT tab in the StrikeLink Injector Pane.
3. **Determine a target location. If you are using FACSim to simulate your observer, follow these instructions:**
    a. In the top left corner of the screen of FACSim, **click the Laser Range Finder icon** to turn on the laser range finder.
    b. With the range finder on, use the mouse to l**ocate the T80** that you laid down earlier in JSAF, **center the range finder on it**, and **click both the left and right mouse buttons at once** to designate the target.
    c. A popup for a new target location from FACSim shows up in StrikeLink. **Click OK** on this popup.
    d. **Click Yes** if a safety warning pops up.
4. **If you are using JSAF to simulate your observer, follow these instructions instead:**

a. In StrikeLink, select the **Generic Target** button (the 4th from the left on the toolbar above the map, with red crosses on it), and then click on the map and enter a specific location in the MGRS field (use 11S NT 65632 96584 for this example).

5. **In StrikeLink, use the target designation to create a new mission:**
   a. Click the **New Mission button** on the **Target Properties** window, then **select CAS Mission** in the Select New Item for Target box and **click OK**.
   b. **Fill out the 9 line** form by choosing the **Flight**, **IP**, **Egress Point**, **Final Attack Heading**, and **TOT** (the TOT should be with reference to JSAF sim time). You may fill out whatever other fields you like as well.
   c. **Click Send** to send the 9 line message to JSAF.
6. The planes will receive the 9 line, and the flight header will **send back WILCO ("will comply") or CANTCO ("can't comply")** after a little bit of a delay. If the flight leader sends a CANTCO, he will then send a modified 9 line that he can do back to StrikeLink after another delay. The FAC can then accept or reject the pilot's 9 line, and if he rejects it, he will send a modified 9 line back to the pilot. The negotiations go back and forth until either the mission is agreed upon or cancelled.
7. Once the flight leader sends a WILCO, **the flight will orbit the CP** until it needs to leave in order to have its munitions impact the target at the TOT.
8. When they need to leave, **the planes fly to the IP and each send a DPIP message to StrikeLink**. Note: The flight leader will always send this message; the wingmen will only send it sometimes, based on their competency level that is set in JSAF.
9. When the DPIP message pops up in StrikeLink, you can **click the Start Tracking button** to have the planes start reporting status on a regular interval. You'll see the plane show up as in icon on the map while they are reporting regularly. You can also turn regular reporting on or off by selecting the plane in the FLT tab and clicking the TRK button in the bottom of that tab. To get a one time status report from a plane, select the plane in the FLT tab and click the AC button in the bottom of that tab.
10. Whenever you want to **clear hot or abort the planes**, either select the individual plane or the whole flight in the FLT tab and click the HA button in the bottom of that tab, or click the HA button at the bottom of the 9 line. If a plane is aborted, it will immediately egress.
11. When the planes reach the attack point (you'll see this designated on the JSAF PVD if you keep the unit selected), **they will drop munitions** if they've been cleared hot.
12. After all aircraft in a flight have finished dropping munitions, you can **send another 9 line for a new mission**.

4.7.2 Verbal CAS Missions

4.7.2.1 Setup

1. **JSAF Setup**
   a. **Start JSAF** if you have not already done so.
   b. **Open the Unit Editor**, and select **FA-18D Flt-of-2** (CAS behaviors are also supported for flights of 1 and 4).
      i. Pick a **location** for your unit (for this example, use 11 SNU 72043 17192).
      ii. Pick a **callsign** for your unit (for this example, use "FAD"; this will mean that your individual planes will be called "FAD1" and "FAD2").
      iii. If you want to do a **Type 1 CAS** mission (which is a CAS mission where the FAC can see both the target and the planes as they come in, and dumb bombs are used), then you do not have to set the plane loadouts. Optionally, you can select

the **Mission/Weapons** tab of the unit editor and under **Choose a Loadout,** select **Type 1 CAS**.

iv. If you want to do a **Type 2 CAS** mission (which is a CAS mission where the FAC cannot see both the target and the planes, and guided bombs are used), then you must select the **Mission/Weapons** tab of the unit editor and under **Choose a Loadout,** select **Type 2 CAS.**

v. ***Note: If you are going to change the loadout or callsign of the entities, you must do this before you click Done in the unit editor. Trying to alter these after the unit has already been laid down does not usually work.**

vi. Click **Done** in the Unit Editor.

c. **Lay down a target**.
   i. Open the **Unit Editor**.
   ii. Select a target vehicle (e.g., **T-80**).
   iii. Pick a **location** for your unit. For this example, use 11 SNT 65632 96584.
   iv. Pick a **callsign** for your unit.
   v. Click **Done** in the Unit Editor.

d. **Optionally, use the JSAF Point Editor to create Control Points in JSAF**. These are points of reference for the planes that indicate where they check-in with their FAC, ingress, egress, etc. In real life, these Control Points would be established beforehand and sent out to everyone. In our case, we can just put them where we want them. One strategy is to set a circle of Control Points around the target, roughly 8-12 miles away from the target. Then put a few Control Points further away.

e. **Save the JSAF scenario**.

2. **Observer Setup**
   a. The instructions for setting up an observer for a verbal CAS mission are exactly the same as setting up an observer for a digital CAS mission; see the instructions for Observer Setup in the Digital CAS Mission SETUP section.

4.7.2.2 Executing a Verbal CAS Mission

1. In JSAF, **select the flight** you laid down so that it shows up in the Unit Editor. Task the unit to do a **"CAS Check-In" task.**
   a. For the **Forward Air Controller Callsign field**, enter the callsign of the FAC ("FAC15" in our case).
   b. For **Control Point**, either select one of the control points that you created in JSAF, or click somewhere else on the map to create a new control point.
   c. If you are doing a Type 1 mission, you have the option to select Low Level w/ Pop Up or Low Level as the **Flight Profile**.
   d. Click **Done**, and **put the unit on order**.
   e. **Note**: If you **keep the flight unit selected** (the actual unit, not the individual vehicles), then you will see the mission geometries and points drawn on the JSAF PVD during the mission.

2. The flight will fly to the Control Point, and when it gets there, the **Flight Leader will send an Aircraft On Station** message that will pop up on the JSAF PVD. Click **OK**.

3. Use the Fire Tasking Tool to create a 9 line to send to the planes:

   a. Click on the **Fire Tasking Tool button** in the Tools window (the button that has FTT on it). This tool is also referred to as the FTT**.**
   b. Click on the **CAS 9-Line** tab.

c. For the **Flight Type** field, select **FWA**.
d. For the **Flt Ldr field**, either click on the Click Here for Map Input button and then click on any aircraft in the flight that you wish to task (JSAF will automatically default your selection to the actual flight leader of the flight you selected), or select the flight leader's callsign in the callsign box below that button.
e. For the **IP/BP section**, you may either select **IP Coordinate** and then select a location on the map for the **9 Line IP Loc** field, or you can select **IP Known Point** and then select an existing point in the **9 Line IP Name** field. (Note: the points that appear in the 9 Line IP Name box are points that have been created with the Point Editor with a "Style" of Control, Initial, or Egress).
f. For the **Target Location section**, select **Coordinate** and then select or enter the location of the T-80 you created for the **9 Line Tgt Loc** field. Note: The other option for selecting target locations is to select **Known Point**, and then select a point that appears in the **9 Line Tgt Name** box (this box is populated by points created in the Point Editor with a "Style" of Target or Target Reference Point).
g. Note: Once you have specified an IP/BP and a Target Location, the Heading, Distance, and Tgt Elevation fields will auto-fill.
h. For the **Egress section**, you may either select **To ECP Coordinate** and then select a location on the PVD to for the **9 Line ECP Loc** field; or you can select **To ECP Known Pt** and then select a point that appears in the **9 Line ECP Name** box (these are points created with the Point Editor with a "Style" of Control, Initial, or Egress); or you can select **In Direction** and then choose a direction for **9 Line Egress Direction**.
i. For the **Final Attack Heading/Cone** section, you can either select **Heading** and enter a final attack heading in the **FAH field,** or you can select **Cone** and then enter two headings to form an FAH Cone.
j. For the **TOT** section, select **TOT** and keep increasing the **TOT** value until the "Invalid Time on Target" message disappears. (Note: TOT is based on JSAF sim time.)
k. Fill out any of the other **optional fields** if you want.
l. Click the **Exec 9-Line** button in the left column.

4. The planes will receive the 9 line, and they will **orbit the Control Point** until it is time to leave in order to have munitions impact the target at the given TOT.
5. When they need to leave, **the planes fly to the IP**.
6. When the flight leader reaches the IP, an **IP-Inbound message** pops up on the JSAF PVD. This dialog box allows you to clear hot or abort the flight leader. **Select Yes (Clear Hot) or No (Abort)** to clear hot or abort the flight leader.
7. Then you will see a pop up for each subsequent wingman, allowing you to **clear hot or abort each wingman**.
8. When each plane reaches the Attack Point (you will see this point drawn on the PVD if you keep the flight unit selected), **it will drop munitions** if it has been cleared hot.
9. If you wish to adjust the target location for either plane before it has dropped munitions (this will allow you to task each plane to hit a different target):
    a. Open the **FTT** and select the **FWA Adjust/Re-Attack tab**.
    b. Click on the **Plane** widget and then select a plane in the flight that you wish to adjust. The callsigns for all planes in that flight will appear in the **Call Sign** box, so you can select which plane you want to adjust there if you like.
    c. Select **Adjust** in the **Action** box.
    d. Select an **Adjusted Target Location** for the plane to fire on. Optionally, you can use the **Line of Bearing** widgets to drag a line on the PVD to give you a sense of distance.
    e. Click the **Exec FWA A/R** button. The adjusted plane will now drop munitions on the adjusted location instead of the original target location at the appropriate time.
10. After any plane has dropped munitions, you can task it to do a re-attack by doing the following:

a. Open the **FTT** and select the **FWA Adjust/Re-Attack** tab.
b. Click on the **Plane** widget and then select a plane in the flight that you wish to re-attack. The callsigns for all planes in that flight will appear in the **Call Sign** box, so you can select which plane you want to re-attack there if you like.
c. Select **Re-Attack** in the **Action** box.
d. Click the **Exec FWA A/R** button. The re-attacking plane will turn around and return to the Action Pt (this point is drawn on the PVD if you have the flight selected) and then attack again on its last given target location.

11. After all planes in a flight have finished dropping munitions, you can **use the FTT to send another 9 line** for a new mission.

4.8 C2PC JSAF ENTITY CONFIGURATION

The following vehicles have behaviors on them to send free text messages, report position, report enemies and send shell reports: HMMWV, M1A1, HMMWV50, LAV AT (TOW), LAV Mortar (81mm), HMMWV (USAF), M1A1 (USMC), HMMWVTOW, LAV 25, LAV C2, HMMWV (USMC), Rifle Plt Ldr, AAV P7, and LAV Mortar (120mm).

4.8.1 C2PC Configuration

By default C2PC is not associated with a defined database such as the Joint Master Unit List provided with AFATDS. So depending on the situation URN configuration for C2PC may be a bit more forgiving. Information on setting up C2PC may be found in the help section of the C2PC application or in official C2PC documentation not provided here. Follow the documentation in section 3 for details on how to configure JLVCDT.

4.8.2 JSAF Configuration

For any of the entities listed above lay one down with a unique call sign. Select the unit so that the unit editor appears. Click the configuration button on the unit editor. This will provided an editor with several buttons. Any button prefixed with “vusmc” is on of the C2PC behaviors. Click on that button to enable/disable that behavior or manipulate its attributes.

Widgets explanation can be retrieved by using the help menu at the top left of the menu bar and selected “What’s This?” from the drop down and clicking on the widget in question.

Appendix A: Acronyms

AAV	Amphibious Assault Vehicle
AFATDS	Advanced Field Artillery Tactical Data System
BOC	Basic Operator Console
C2PC	Command and Control Personal Computer
C4I	Command, Control, Communications, Computers, and Intelligence
CAS	Close Air Support
DVTE	Deployable Virtual Training Environment
FAC	Forward Air Controller
FSCC	Fire Support Coordination Center
FTT	Failure to Train
FWA	Fixed Wing Aircraft
GDU	Gun Display Unit
GPS	Global Positioning System
HD	Homeland Defense
HLA	High Level Architecture
HVT	High Value Target
IC	Intelligence Community
JLVCDT	Joint Live Virtual Constructive Data Translator
JMUL	Joint Master Unit List
JSAF	Joint Semi Automated Forces
LAN	Local Area Network
MGRS	Military Grid Reference System
OFP	Operational Flight Program
OPFAC	Operational Facility
PCMCIA	Personal Computer Memory Card International Association

PRC	Private Channel
PVD	Plan View Display
RTI	Run Time Infrastructure
SAM	Surface to Air Missile
SEE	Simulation Execution Environment
SOP	Standard Operating Procedures
TLE	Target Location Error
TOT	The TOT
UTM	Universal Transverse Mercator
VMF	Variable Message Format
XML	Extended Markup Language